



Massachusetts Bay Transportation Authority

QCO Update

MBTA Safety, Health & Environment Meeting

July 17, 2025

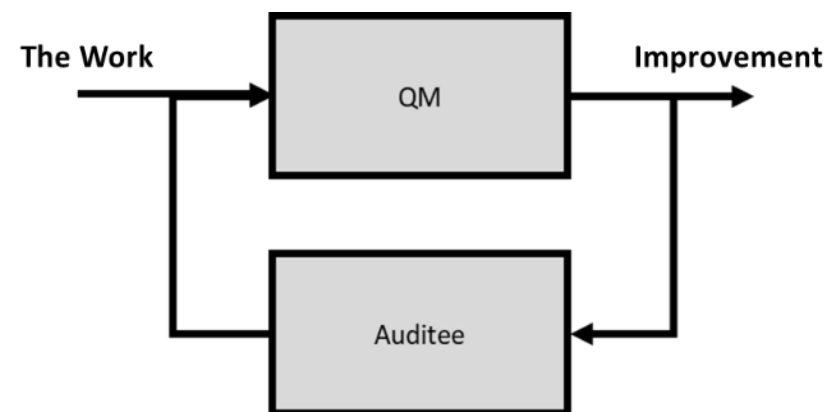
Meredith Sandberg, Chief of Quality, Compliance & Oversight





Quality in Action: Continuous Improvement

- Quality is a team effort
- Building on existing structures and processes
- Incorporating frontline feedback
- Creating closed loop feedback systems





Quality Management provides **oversight** and **process-level assurance** to drive **feedback** and **continuous improvement** in alignment with stakeholder priorities through audit plans. Our current scope focuses on growth-based assurance in the following areas:

Embedded Dedicated QM Staff & Assurance Programs

- **Vehicle Maintenance** – Providing process-level assurance with a focus on most frequent mileage-based preventive maintenance.
- **Engineering & Maintenance** – Providing assurance for preventive maintenance, while maturing into process-level assurance for safety-critical activities.

Emerging Partial QM Staff & Assurance Programs

- **Vehicle Engineering** – Developed the VE QMP and documented existing processes for VE procurements
- **Engineering & Capital** – Supported the development of ECD QMP in alignment with QMS policy
- **Operations** – Partnering with OTIP and Safety team to grow together. Piloting audits in support of FTA findings.



Quality Promotion & Outreach

QUALITY MANAGEMENT: HOW WE AUDIT FOR QUALITY IMPROVEMENT



The QM auditor observes and collects information along side the person audited.



The auditor shares the information they gathered in real-time and talk through what the issues are that led to noncompliance.



If appropriate, the auditors then facilitate a conversation with the auditee and management during the audit.



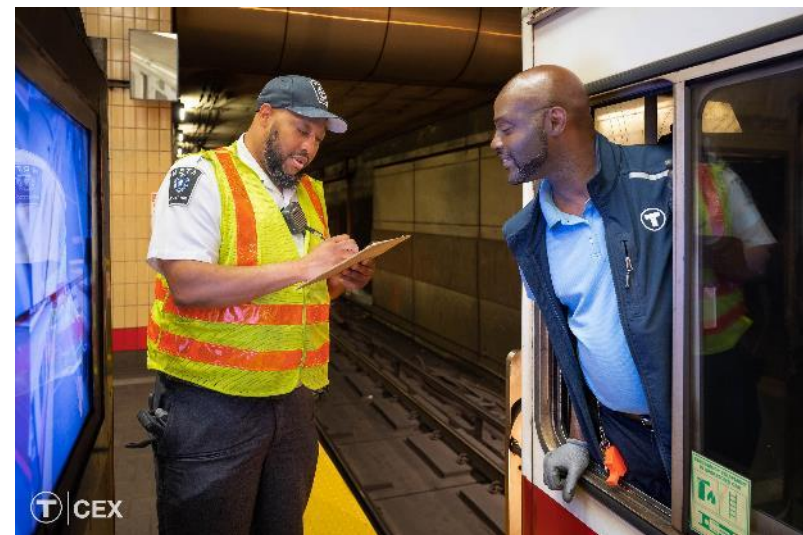
When the audit and conversations are complete, documents will be uploaded for recording and centralized transparency



Multi-stream communication allows for trust to be built and self-reporting to become normalized.



Having people join in the collaboration of building quality culture leads to improved results.



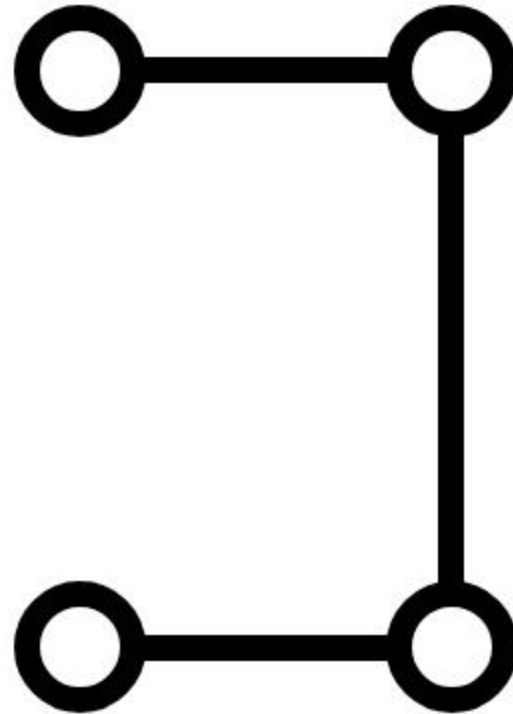
Example of Audit Finding & Continuous Improvement Resulting in Process Resolution, Change and Improvement

Risk Identified

Flush-mounted rear switch could stick—potentially causing the **engine to start unexpectedly during maintenance.**

Risk Removed

No further incidents. **A system-wide safety risk was resolved—**starting with one MBTA audit.



Audit Identified the Issue

QM audits identified the risk and **raised it to Vehicle Maintenance and Engineering**, who further escalated to the OEM.

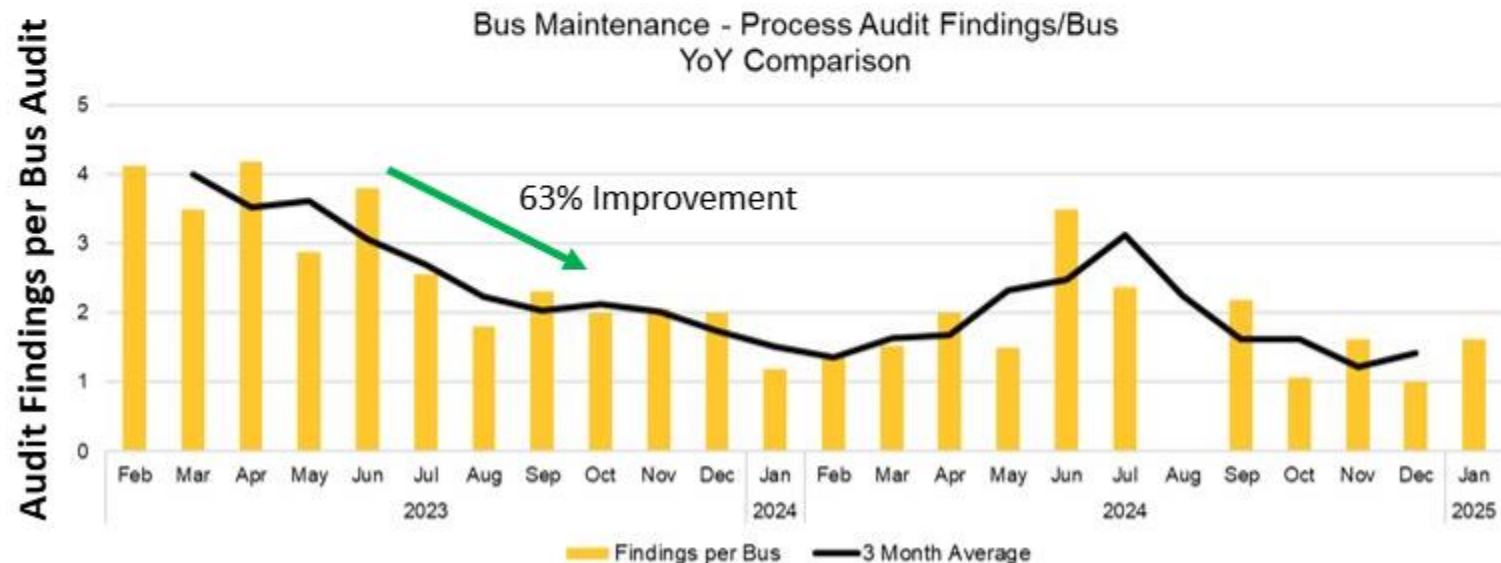
Systemic Fix Implemented

OEM confirmed a flaw across North America and **issued a corrective bulletin; MBTA applied fixes.**





Bus Vehicle Maintenance Continuous Improvement

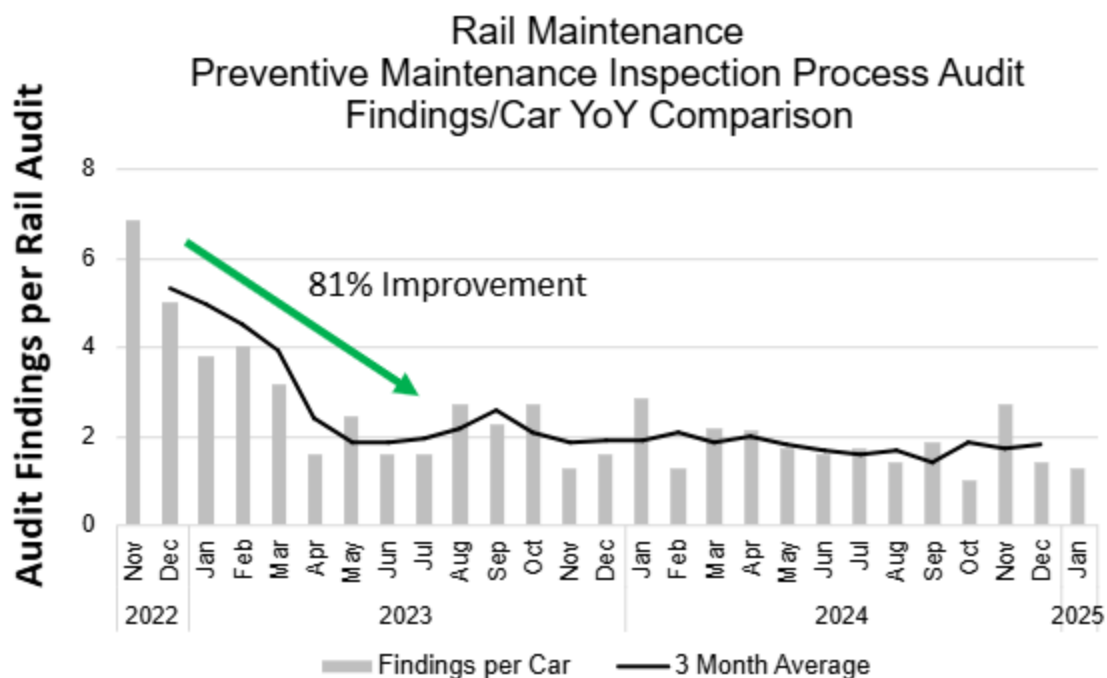


High-Level Results

- **Program History:** 63% reduction in findings per audit across all garages since program inception.
- **2024 Improvement:** 37% year-over-year improvement across all garage.
- Findings per audit have reached record lows.



Rail Vehicle Maintenance Continuous Improvement



Measurable Improvement

- **Program History:** 81% reduction in findings per audit across all rail lines since program inception.
- **2024 Improvement:** 24% year-over-year improvement across all rail lines.

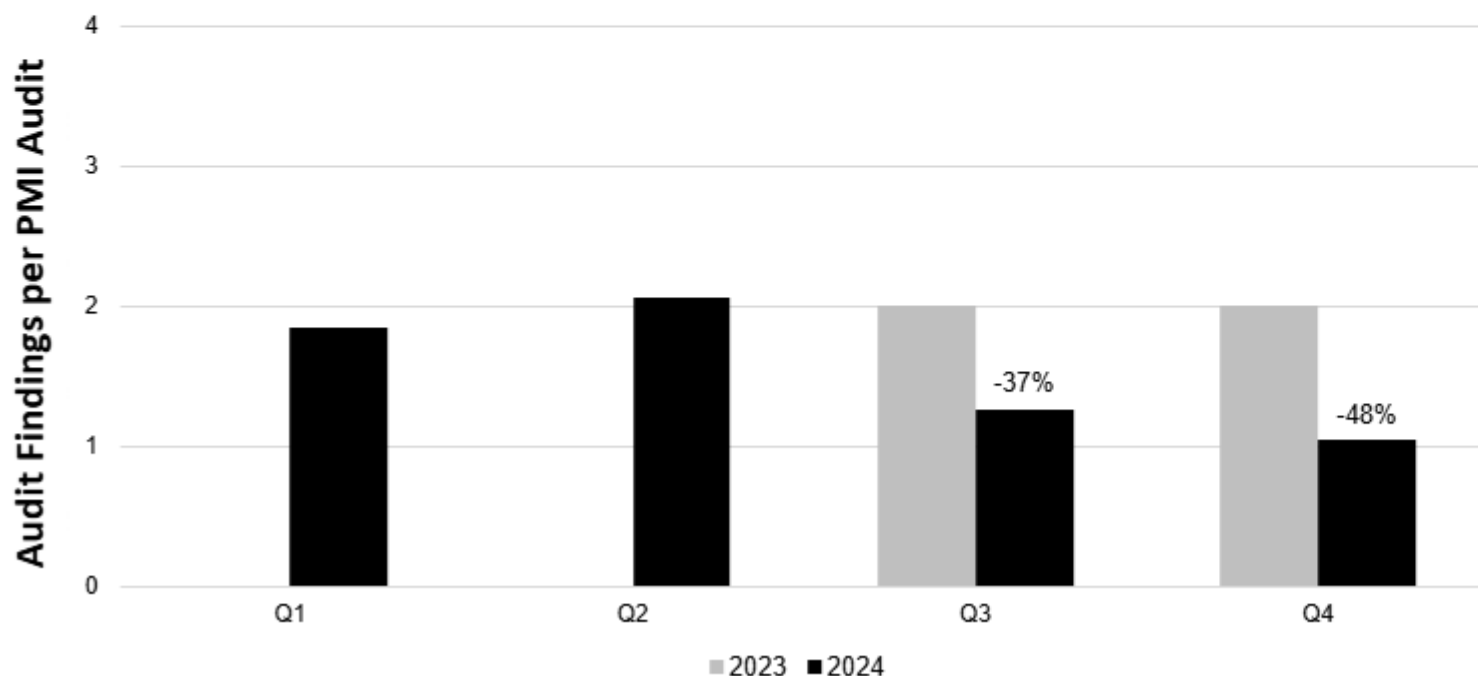
Examples of Improvement

- Introduced more durable gauges for *current collector paddles* and *trip stops* after a series of repeat findings.
- Vehicle Maintenance led the improvement. QM verified the fix.



Engineering & Maintenance Results of Process Audit Pilots

MOW - Process Audit Findings/Audit
YoY Comparison



High-Level Results

- Process audits launched in 2023 and are driving measurable improvement.
→ Now expanded across E&M
- MOW (Track Maintenance) led the initial pilots → Focused on Visual Track & Geometry PMIs
- 41% YoY reduction in audit findings.
- Scaling success to SCM (Signals), PSM (Power), and TFM (Facilities).
- Audits not just identifying issues, rather driving process change.

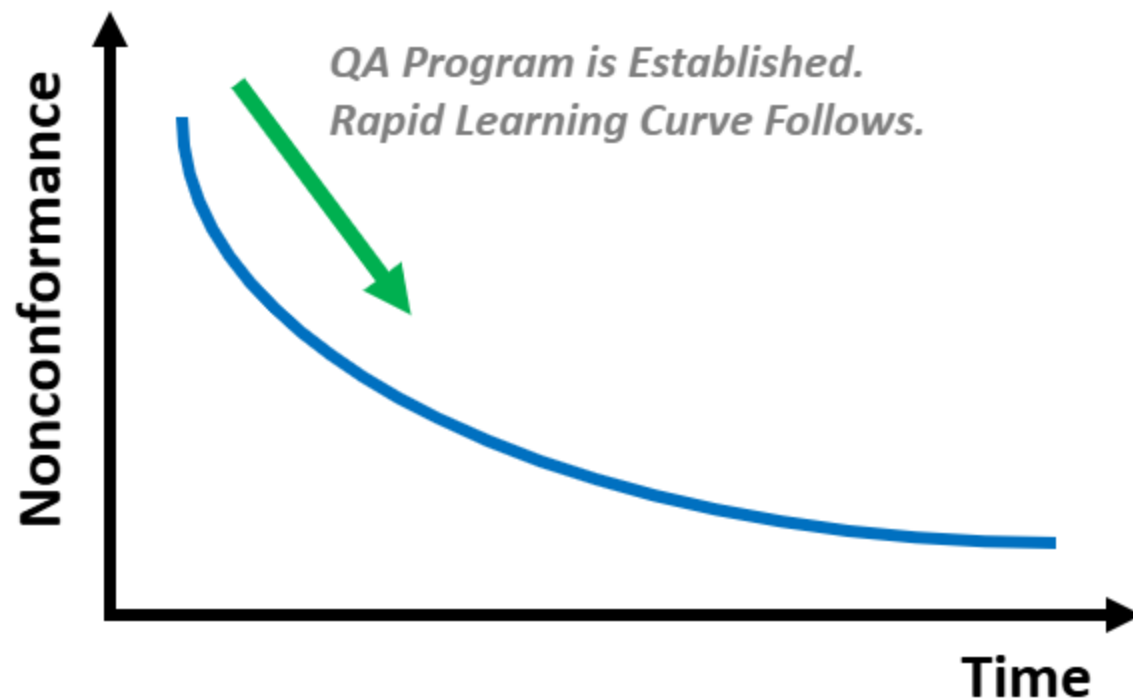


Vision for a More Agile Quality Management Program



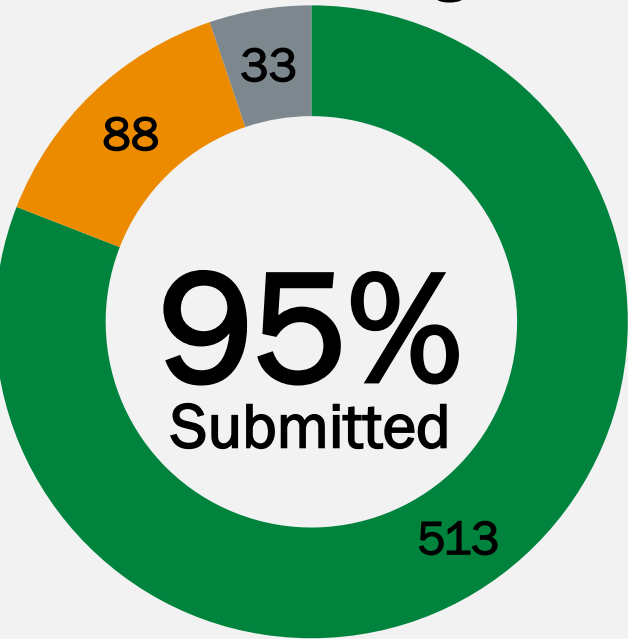
Learning Curves of Continuous Improvement

*QA Program is Established.
Rapid Learning Curve Follows.*

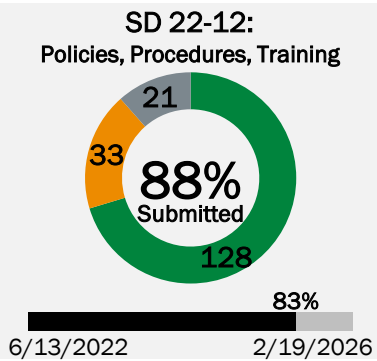
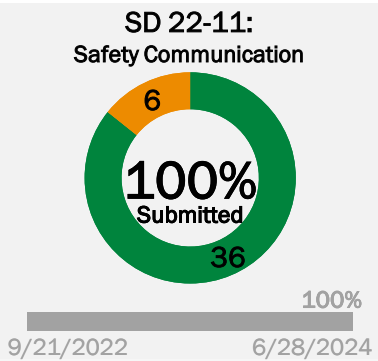
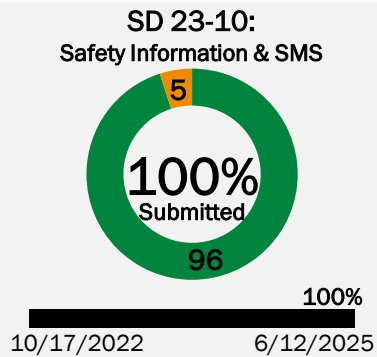
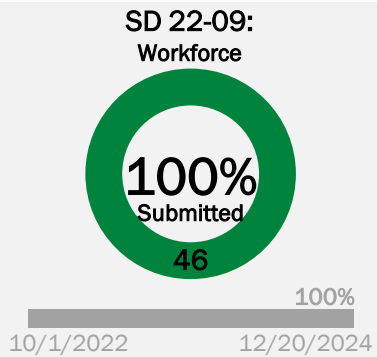
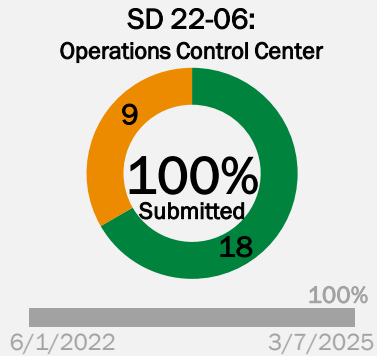
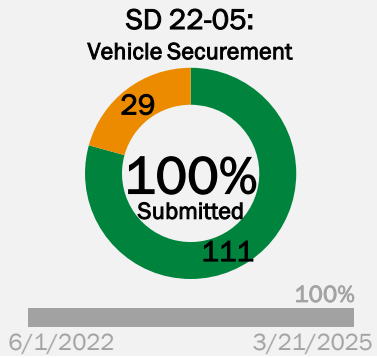
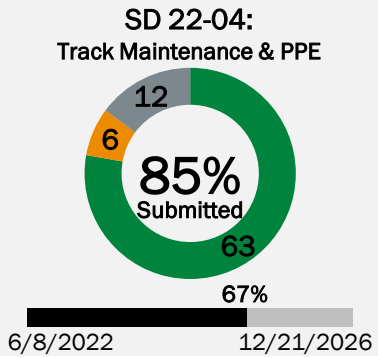


FTA SMI Response Progress Summary

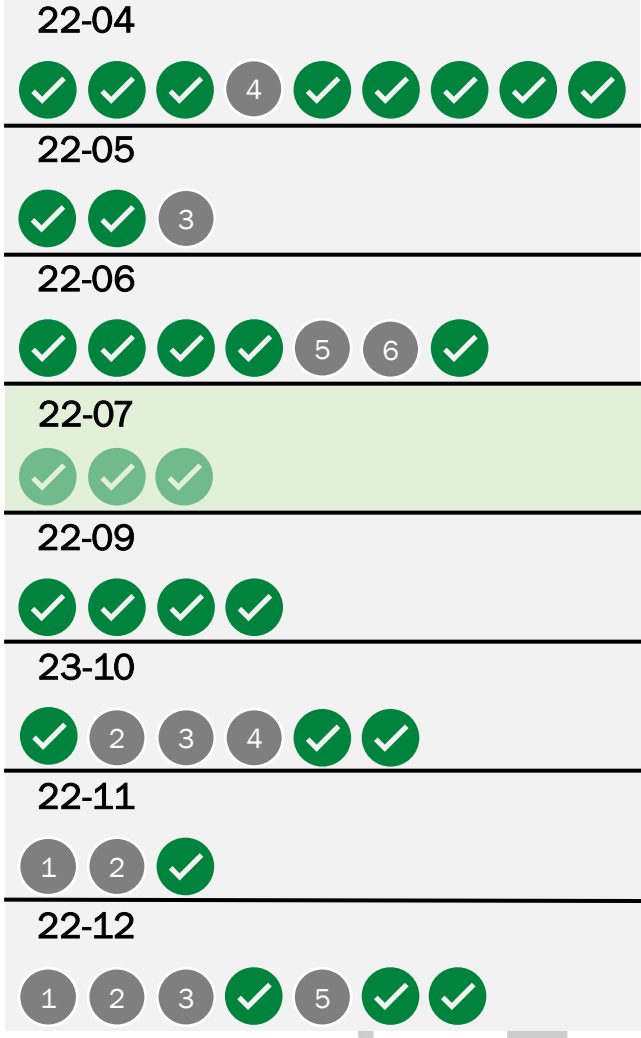
Overall CAP Progress¹



Overall Findings	Total	42
	Closed	29
	Ongoing	13



Overall Finding Progress

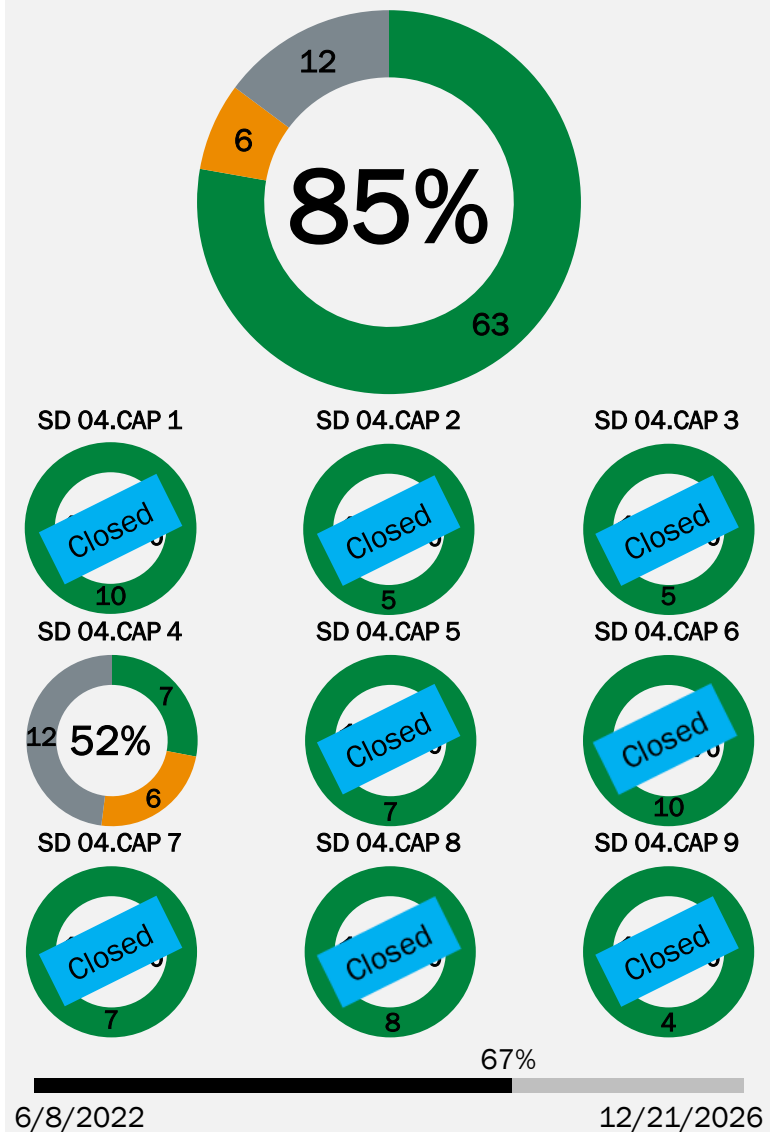


✓ Finding Closed

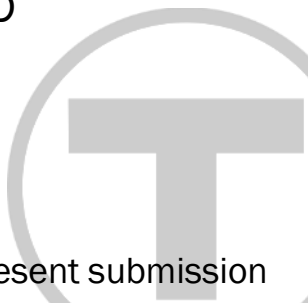
Appendix



SD 22-4: Track Maintenance & PPE

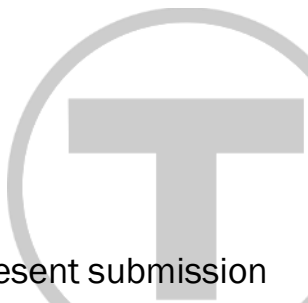
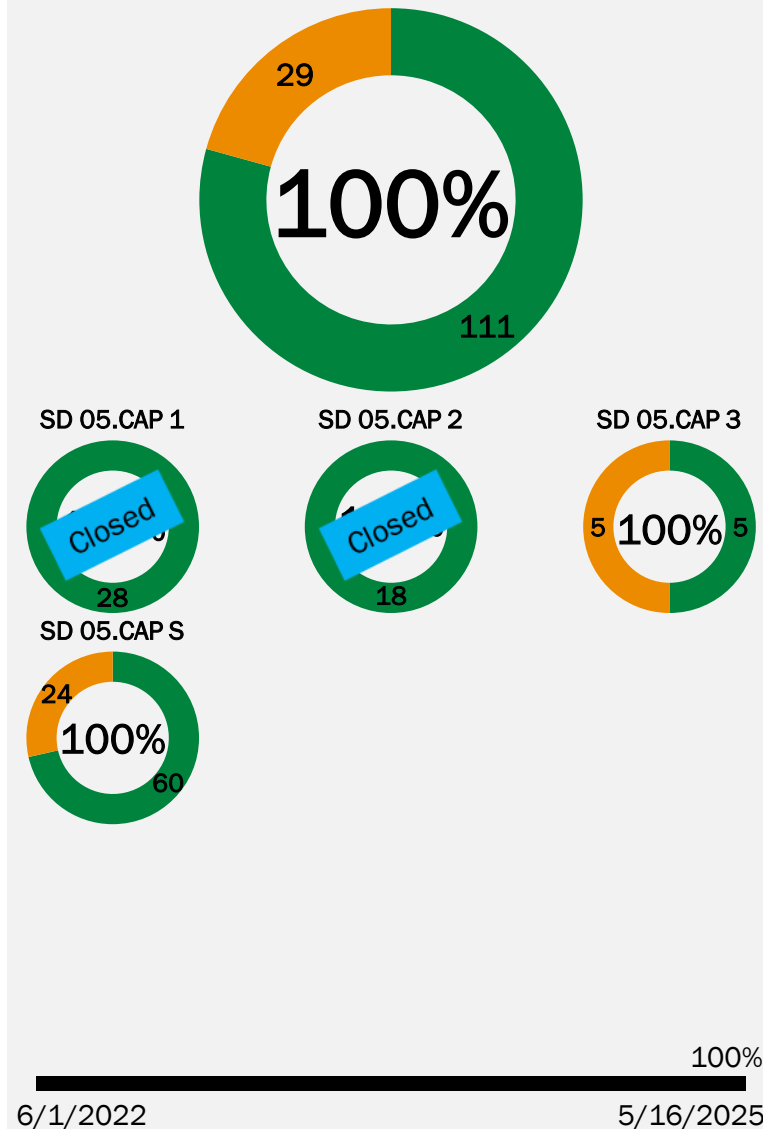


- ✓ F1: Published updated Rulebook for Operations Employees incorporating PPE requirements – CAP CLOSED
- ✓ F2: All action items completed CAP CLOSED
- ✓ F3: Raised Tufts Curve Speed Restriction after completing Cologne Egg replacement – CAP CLOSED
- **F4: Developed Power SGR Strategy, correlated to FY26 CIP**
- ✓ F5: Submitted budget requests for MOW equipment and resource needs – CAP CLOSED
- ✓ F6: Developed Capital Funding Request & Plan for Accelerated Implementation of EAM – CAP CLOSED
- ✓ F7: Developed and Implemented New Weekly Track Conditions Report for Executives – CAP CLOSED
- ✓ F8: Updating SMRP metrics to FTA for our quarterly update 9/30/24 – CAP CLOSED
- ✓ F9: Restored Green Line Work Train to Working Order – CAP CLOSED



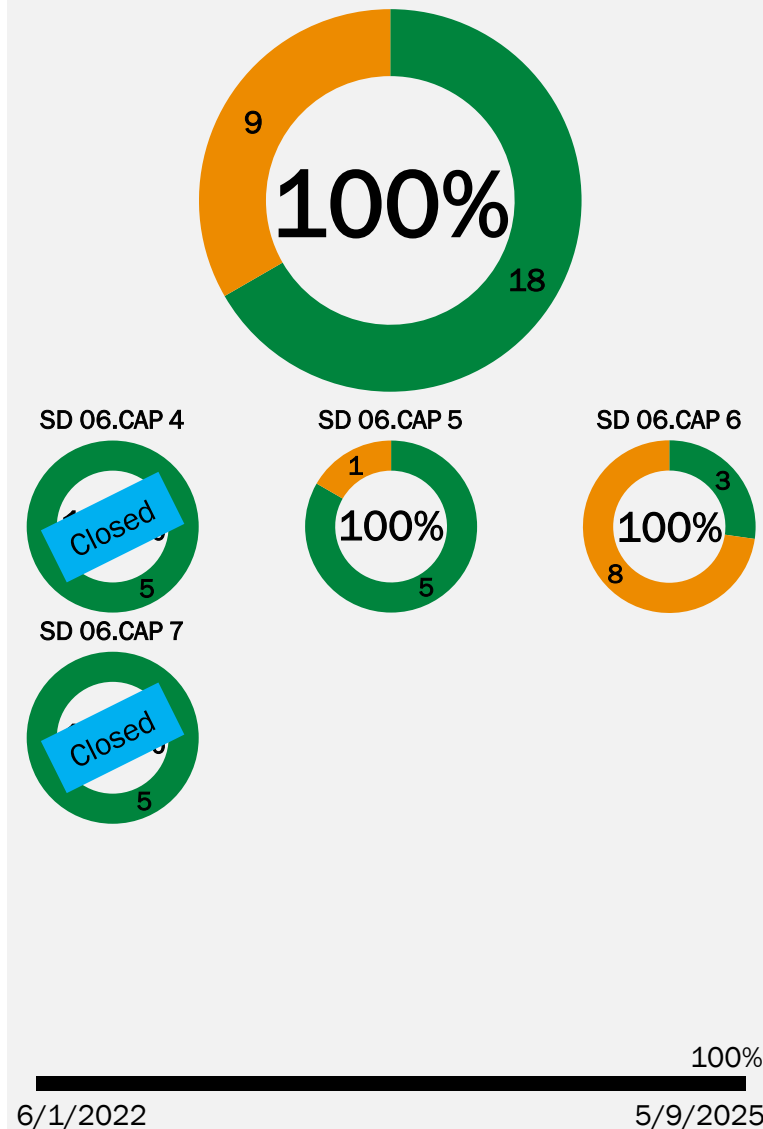
SD 22-5: Vehicle Securement

- ✓ F1: Procedures for Safe Movements of Rail Vehicles– all action items completed – CAP CLOSED
- ✓ F2: Training for SMRV Procedures – all action items completed – CAP CLOSED
- F3: Implemented Compliance Program for Safe Movement, all action items completed – CAP CLOSURE REQUESTED
- Supplemental: All action items completed. Under FTA review. – CAP CLOSURE REQUESTED



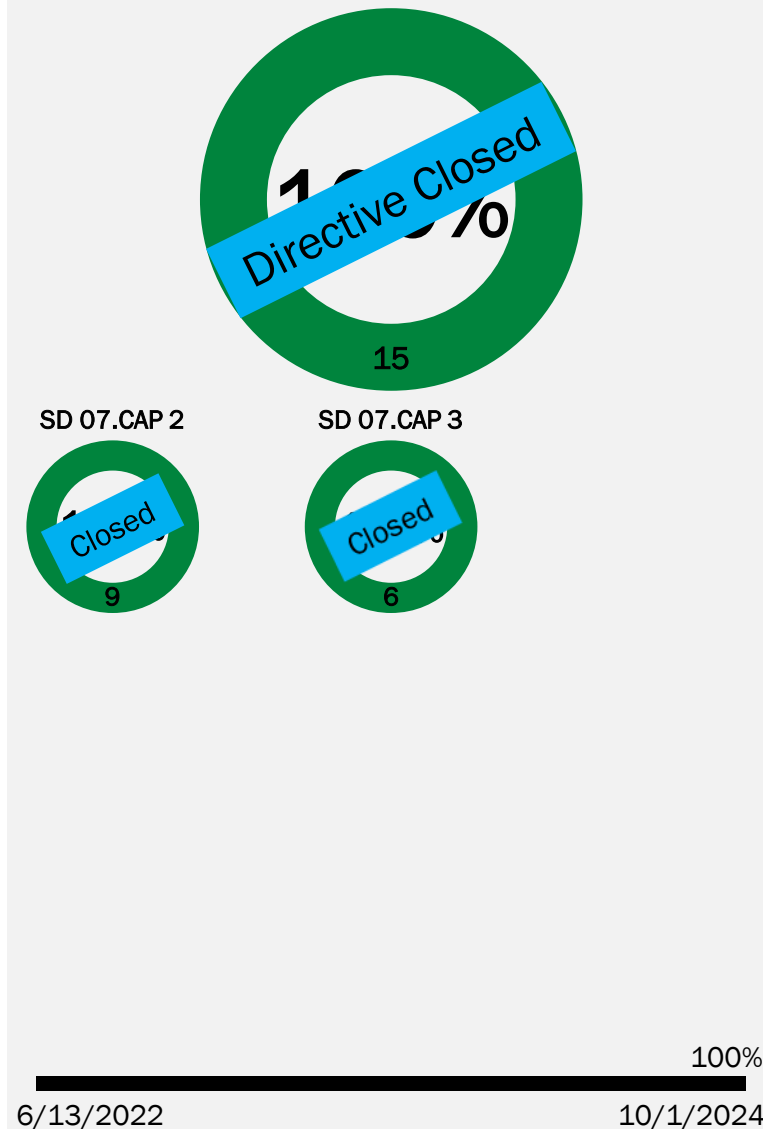
SD 22-6: Operations Control Center

- ✓ F1: Ensured that staff working in OCC are certified – FINDING CLOSED
- ✓ F2: Established policies to ensure OCC staff have sufficient time off between shifts – FINDING CLOSED
- ✓ F3: Established Operating Procedures to Ensure No Staff Performing Dual Roles – FINDING CLOSED
- ✓ F4: Ensured 100% Compliance with Work Hour Restrictions – CAP CLOSED
- F5: Staffed to 27 RTL Dispatchers Including Supplemental Resources - all action items submitted, under FTA verification
- F6: Implementing plan to make OCC role more attractive (OCC renovation in design phase) – CAP CLOSURE REQUESTED
- ✓ F7: Updating materials for specialized dispatcher training. – **CAP CLOSED**



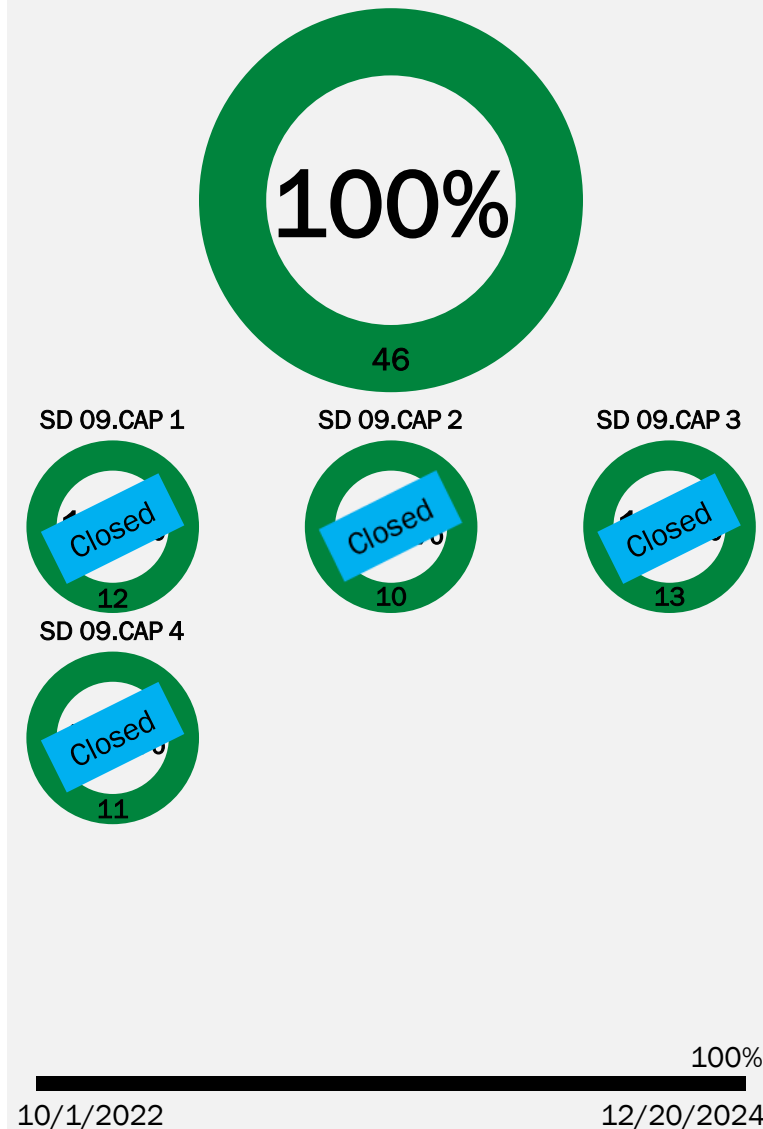
SD 22-7: Lapsed Certification Process

- ✓ F1: Ensured 100% of Operating Personnel Are Current in Certifications – Finding Closure Requested in Fall 2023. Quarterly report for rest violations showing 99.9% compliance submitted to FTA on 4/8/24 - FINDING CLOSED
- ✓ F2: Ensured 100% of Operating Personnel Are Current in Certifications – CAP CLOSED
- ✓ F3: Ensured 100% of Operating Personnel Are Current in Certifications; Designing and Implementing Certification Management Procedures - dashboard went live 2/1/24 – CAP CLOSED



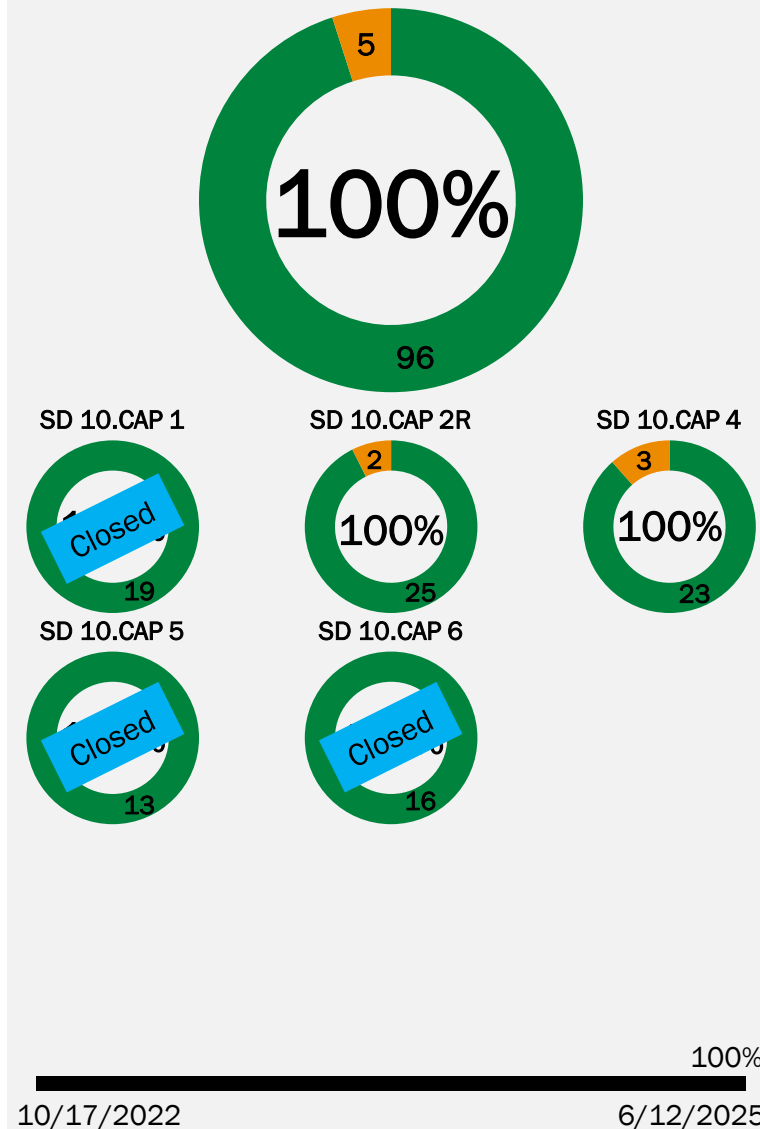
SD 22-9: Workforce

- ✓ F1: Workforce Assessment: Final safety risk assessment and workforce assessment accepted. – CAP CLOSED
- F2: Hiring Plan: First draft of five-year hiring plan accepted, final draft under verification. – CAP CLOSURE REQUESTED
- ✓ F3: In final stages of implementing training plan for updated Safety Certification policy, verified results with FTA on-site. – CAP CLOSED
- ✓ F4: Contractor Oversight: All action items completed, verified results with FTA on-site. – CAP CLOSED

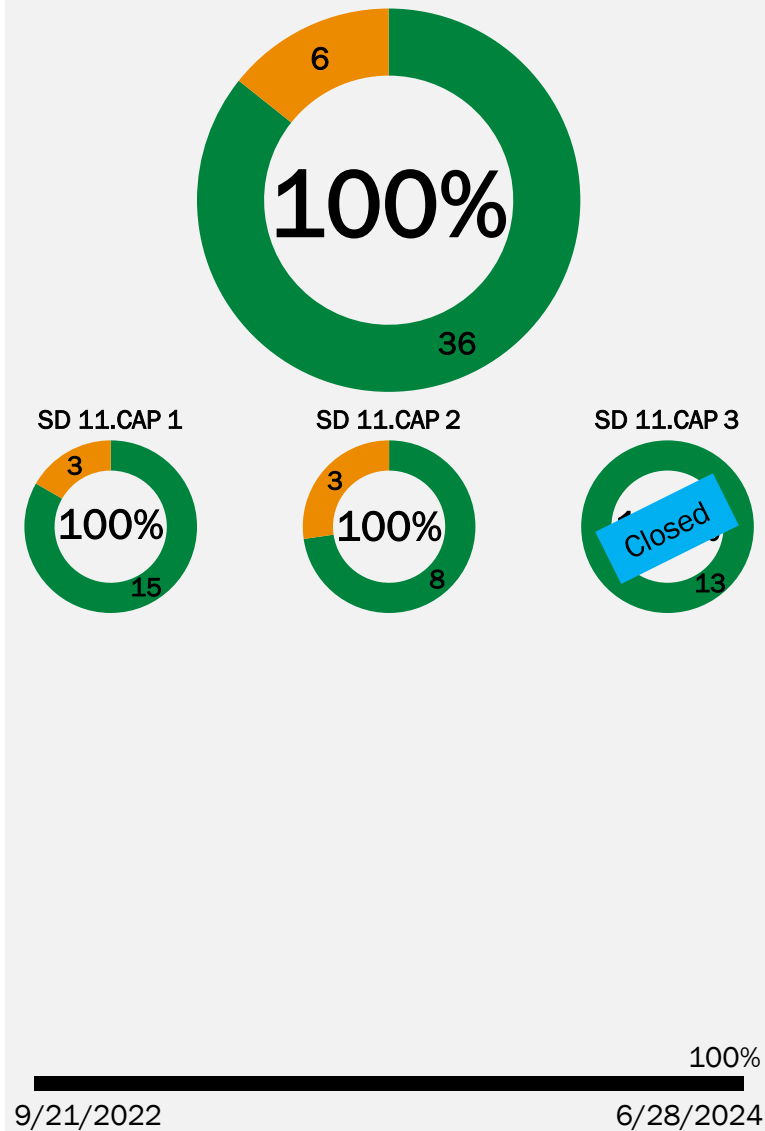


SD 23-10: Safety Information & SMS

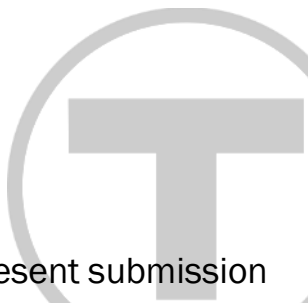
- ✓ F1: All action items completed – CAP CLOSED
- F2/F3: All action items completed. Under FTA review. – CAP CLOSURE REQUESTED
- F4: All action items completed. Under FTA review. – CAP CLOSURE REQUESTED
- ✓ F5: All action items completed – CAP CLOSED
- ✓ F6: All action items completed – CAP CLOSED



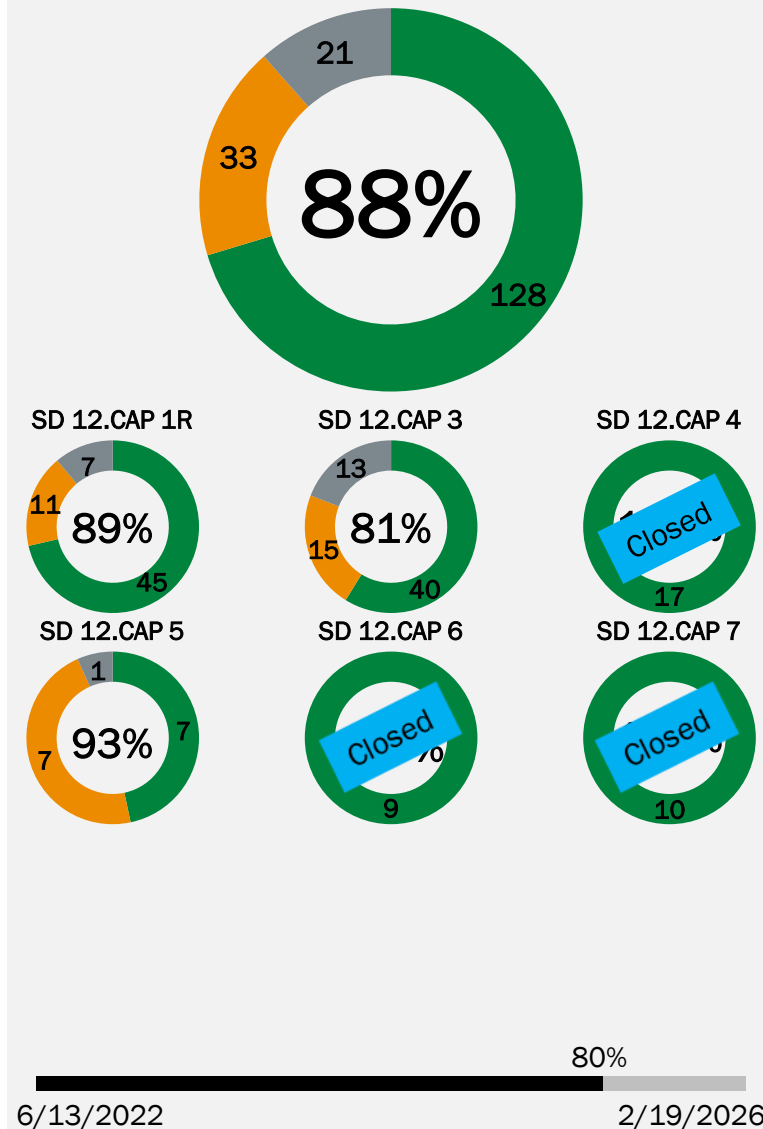
SD 22-11: Safety Communication



- F1: All action items completed, under FTA verification– CAP CLOSURE REQUESTED
- F2: All action items completed, under FTA verification– CAP CLOSURE REQUESTED
- ✓ F3: All action items completed, under FTA verification – CAP CLOSED



SD 22-12: Policies, Procedures & Training



- F1/F2: Launched OTIP for Light Rail; updating for Heavy Rail
- F3: Implemented and launched Document Management System (Document Authority)
- ✓ F4: All action items completed – CAP CLOSED
- F5: Established process for maintenance and training updates, established mobile access to central repository, and submitted monthly digitization progress for VM (complete) and E&M
- ✓ F6: Evaluated program design for Rail Ops mentorship – CAP CLOSED
- ✓ F7: Completed all action items, submitted Weak Signals Quarterly Report – CAP CLOSED

